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EUGENE H. EICKHOLT			EXAMINER	
1119 CAROLINE STREET			GOFF II, JOHN L	
FREDERICKSBURG, VA 22401			ART UNIT	PAPER NUMBER
			1791	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/581,700	ACORS, RONNIE B.	
	Examiner	Art Unit	
	John L. Goff	1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 03 January 2007.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-50 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-50 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 10 February 2009 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ . |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/6/06</u> . | 6) <input type="checkbox"/> Other: _____ . |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 25, 40, and 49 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 25, 40, and 49 are not original claims and were added in the preliminary amendment filed 6/6/06.

3. Claims 25 and 40 require “moving the self contained heating power source and heating element in unison”. It is unclear where in the specification moving the power source, i.e. batteries, with the heating element is disclosed.

4. Claim 49 requires “manually pressing the belt ends into contact while being axially aligned on belt ends holders of the kit” and “removing the heating element while continuing to press the ends into contact to fuse the ends”. It appears “while continuing” is intended to require the ends are pressed together before heating and maintaining the pressing after heating. However, it is unclear where in the specification this is described. The specification does disclose forming a space between the belt ends to insert the heating element and then pressing the belt ends together after heating to fuse the ends (Page 17, lines 18-23).

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 20, 35, and 50 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. Claims 20 and 35 require “while maintaining pressing the ends to join them”. It is unclear what is required by “maintaining” as there is not a previous limitation requiring the ends to be pressed prior to or during contact with the heating element. The claims is interpreted as requiring - - while pressing the ends to join them - -, and it is suggested to remove “maintaining” from the claim.

8. Claim 50 recites the limitation "the hot wire" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. It is noted the “means” limitations in the claims do not require “means” for such that 35 U.S.C. 112 sixth paragraph is not invoked.

11. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Wermelinger et al. (U.S. Patent 5,241,157).

Wermelinger discloses a device capable of welding/joining the free ends of thermoplastic material comprising a body (23) including a pair of clamping means (4, 5, and 6), one-half of the pair of clamping means on each side of the body, capable of holding the free ends in juxtaposition and compressing the free ends together, a first adjustment means (22 and 26) capable of adjusting the distance between the free ends and applying a compressive force between the free ends, and a heating means (7). Wermelinger further teaches means (25) to pass the heating means between the free ends of the thermoplastic material whereby the heating means is capable of being passed between the free ends of the thermoplastic material thereby softening the free ends of the thermoplastic material after which the softened free ends are capable of being compressed together using the adjustment means to adjust the clamp means towards each other and compress the free ends until the softened free ends fuse together and cool (Figure 2 and Column 3, lines 1-27). The device taught by Wermelinger includes portions of which are hand operated (26) such that the device is considered of a size capable of being handheld.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 1 and 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson (U.S. Patent 5,690,776) in view of Wermelinger.

Anderson discloses a hand held device capable of welding/joining the free ends of thermoplastic material comprising a pair of clamping means (20 and 40) capable of holding the free ends in juxtaposition and compressing the free ends together including first adjustment means (60) capable of adjusting the distance between the free ends and applying a compressive force between the free ends and including heating means (a wand not shown) whereby the heating means is capable of being passed between the free ends of the thermoplastic material thereby softening the free ends of the thermoplastic material after which the softened free ends are capable of being compressed together using the adjustment means to adjust the clamp means towards each other and compress the free ends until the softened free ends fuse together and cool (Figures 1 and 2 and Column 1, lines 34-46 and Column 3, lines 55-57 and Column 4, lines 11-33 and Column 4, lines 55-67 and Column 5, lines 1-5 and Column 6, lines 38-67 Column 7, lines 35-36 and Column 8, lines 26-45). Anderson is silent as to the device including a body and a means to pass the heating means between the free ends of the thermoplastic material, it being noted that while Anderson teaches a heated wand is placed between free ends of the thermoplastic material Anderson does not teach the particular means for the placing the heated wand. Wermelinger is more fully described above. Wermelinger discloses a device similar to that of Anderson capable of welding/joining the free ends of thermoplastic material wherein the heating means is moved between the free ends of the thermoplastic material using a means (25) connected to a guide rod (not shown) slidingly engaged with a hole (24) located in the body (23) which body is located between the clamping members with the upper surface of the clamping

members providing a space to contain the body when the clamping members compress the free ends of the thermoplastic material (Figure 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device taught by Anderson to include a body and a means for passing the heating means connected to the heating wand as shown by Wermelinger such that the heating wand is unitary with the device and not misplaced.

Regarding claims 6-8, Anderson teaches the clamping means comprises a pair of jaws (31 or 100 and 35) that are cut out capable of receiving the free ends of the thermoplastic material and wherein the pair of jaws include second adjustment means (37 or 38) to enable movement of one jaw relative to the other jaw capable of clamping the free ends of the thermoplastic material in vice-like fashion. Anderson teaches the means to enable movement of one jaw of the clamping means relative to the other jaw of the clamping means comprises a threaded screw member that passes through a non-threaded hole in one jaw and is received in corresponding threads in the other jaw, whereby turning the threaded screw member changes the distance between the jaws capable of compressing the free ends of the thermoplastic material between the jaws and firmly holding the free ends in vice-like fashion, and where each side of the pair of clamping means is capable of holding the free ends of the thermoplastic material independently. Anderson teaches including first guide rods (the other of 37 or 38 not comprising the second adjustment means) that are securely fixed in one of the jaws, and that pass through a hole in register with the other jaw, to prevent rotation of the jaws around the second adjustment means.

Regarding claim 9, Anderson as modified teaches further including second guide rods (84) that are securely fixed in the body by projecting past the body on each side of the body and engaging corresponding holes in each side of the clamping means, in register with the second

guide rods, whereby the clamping means are maintained in register when the first adjustment means is applied, to prevent the two halves of the clamping means from rotating around the first adjustment means.

14. Claims 2-4 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson and Wermelinger as applied to claims 1 and 6-9 above, and further in view of Sakamoto et al. (U.S. Patent Application Publication 2003/0015512) or Penn (U.S. Patent 3,408,478).

Anderson and Wermelinger as applied above teach all of the limitations in claims 2-4 and 10 except for a specific teaching that the heating wand comprises an electrically conductive member connected to a battery, it being noted that Anderson teaches a heating wand without further specification. It is well taken in the art that a simple, efficient, and inexpensive heating wand used in plastic welding is a heating means comprising an electrically conductive member such as a ni-chrome wire connected to a source of electrical energy such as at least one battery to pass electricity through and heat the conductive member as evidenced by Sakamoto and Penn (Paragraphs 0008, 0024, 0032, and 0037 of Sakamoto and Column 1, lines 27-30 and Column 2, lines 49-54 of Penn). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use as the heating wand in Anderson as modified by Wermelinger a battery powered heating wand as shown by Sakamoto or Penn that is simple, efficient, and inexpensive.

Regarding claim 10, Anderson as modified by Wermelinger and Sakamoto or Penn teach a heated wire is held in a wire holding means (25) which is securely connected a third guide rod (not shown) slidingly engaged by the body (23) whereby the wire holding means and heated wire

is capable of being pushed or pulled between the free ends of the thermoplastic material and soften the free ends, the third guide rod being in slidable register with a corresponding hole (24) in the body of the device. Anderson as modified does not teach a plurality of third guide rods or holes in the body. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the wire holding means and body taught by Anderson as modified by Wermelinger and Sakamoto or Penn to connect more than one third guide rods to the wire holding means in slidable register with a plurality of corresponding holes in the body to better support the wire holding means during pushing and pulling and preventing the wire holding means from rotating within a single hole in the body.

15. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson and Wermelinger as applied to claims 1 and 6-9 above, and further in view of any one of Crispin (U.S. Patent 2,901,012), Fox (U.S. Patent 5,860,197), or Riley et al. (U.S. Patent 4,221,419).

Anderson and Wermelinger as applied above teach all of the limitations in claim 5 except for a specific teaching that the first adjustment means comprises a threaded rod that is securely journaled to the body that is threaded right and left hand on opposite ends of the threaded rod. Anderson teaches a first adjustment means comprises a threaded rod threaded in only a single direction. However, Anderson is not limited to any particular first adjustment means only that the means be capable of moving the two halves of the pair of clamping means towards or away from each other including stopping at different distances between the two. It is well known in the art to move two halves of a pair of claming means towards or away from each other including the capability of stopping at different distances between the two using a threaded rod that is threaded right and left hand on opposite ends of the threaded rod each threaded end received in

corresponding right and left hand threads of the pair of clamping means whereby turning the threaded rod moves the two halves of the pair of clamping means towards or away from each other as evidenced by Crispin (Figure 1), Fox (Figure 1), and Riley (Figure 1) wherein Fox additionally demonstrates a threaded rod that is securely journaled in a body (30) by each opposite end of the threaded rod projecting on opposite sides of the body threaded in corresponding right and left hand threads of the pair of clamping means. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use as the first adjustment means in Anderson as modified by Wermelinger a threaded rod that is threaded right and left hand on opposite ends of the threaded rod as such was a known suitable means for moving the two halves of the pair of clamping means towards or away from each other as evidenced by Crispin, Fox, or Riley and including the requirement in Anderson of stopping at different distances between the two.

16. Claims 11-14, 16-29, and 31-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson in view of Sakamoto or Penn.

Anderson teaches a method of welding together free ends of thermoplastic continuous belt to form a belt and/or repair a belt on-site comprising clamping each of the free ends of the thermoplastic belt between a pair of clamping jaws, axially adjusting the distance between each pair of clamping jaws relative to the other, to position the free ends of the thermoplastic belt at a suitable distance to pass a heating wand/means between the free ends of the thermoplastic belt, passing a heating means between the free ends of the thermoplastic belt to temporarily contact and soften the free ends of the thermoplastic belt, and axially compressing the softened free ends of the thermoplastic belt together until they fuse and cool. Anderson is silent as to the heating

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wand being heated by battery power or otherwise having a self-contained power source or being manually held, portable or cordless. It is well taken in the art that a simple, efficient, and inexpensive heating wand used in plastic welding is a manually held, portable, and cordless wand including a heating means comprising an electrically conductive member such as a ni-chrome wire connected to a source of electrical energy such as at least one battery to pass electricity through and heat the conductive member as evidenced by Sakamoto and Penn (Paragraphs 0008, 0024, 0032, and 0037 of Sakamoto and Column 1, lines 27-30 and Column 2, lines 49-54 of Penn). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use as the heating wand in Anderson a battery powered, manually held heating wand as shown by Sakamoto or Penn that is simple, efficient, and inexpensive.

Regarding claims 14 and 29, the battery power taught by Sakamoto or Penn requires nothing more than a conventional battery such that Sakamoto is considered to teach the use of ordinary batteries.

Regarding claims 16-20 and 31-34, the heating element taught by Sakamoto is a heating wire comprising a ni-chrome wire and a copper wire where the ni-chrome wire is also wound to form a strip wherein either of the wound ni-chrome wire or copper wire is considered ribbon when ribbon is given its usual meaning of a long thin strip. The heating element taught by Penn is a heating wire comprising a ni-chrome wire wherein the wire is considered a ribbon when ribbon is given its usual meaning of a long then strip. In the event it is shown that the heating element taught by Sakamoto or Penn is not necessarily a wire or a ribbon the following rejection would apply. Both Sakamoto and Penn teach the dimensions of the heating element is not critical which dimensions are selected as a function of adequately providing heat (Paragraph

0037 of Sakamoto and Column 4, lines 14-39 of Penn). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use as the heating element in Anderson as modified by Sakamoto or Penn an element of any dimension such as a wire or ribbon selected as a function of adequately heating the belt ends as only the expected results of heating the belt ends would be achieved.

Regarding claim 20 and 35, Anderson teaches pressing the belt ends into contact with the heating wand until the ends are melted and then removing the wand while maintaining the pressing force to the ends to join them. Anderson does not specifically teach the heating element is removed from the belt ends upon visually observing the ends softened to their melting point. However, it appears Anderson must remove the heating element upon visually observing the ends softened to their melting point otherwise the ends may not be melted. In the event it is shown that Anderson does not necessarily perform the limitation the following rejection would apply. It would have been obvious to one of ordinary skill in the art at the time the invention was made to remove the heating wand as taught by Anderson as modified by Sakamoto or Penn upon visually observing the ends softened to their melting point as Anderson requires the ends to melt and the heating wands taught by Sakamoto or Penn are hand operated such that a person using the heating wand is the simplest means of observing the point when the ends are melted.

Regarding claims 22-24 and 37-39, Anderson teaches holding the belt ends in axial alignment while passing the heating element along the belt ends. Anderson as modified by Sakamoto or Penn do not specifically the angle at which the heating element is passed to the belt ends. However, because the heating element passes through an opening between the axially aligned belt ends the element must be at some angle greater than 0 degrees and up to 90 degrees,

i.e. perpendicular, to pass through the opening between the belt ends. Absent any unexpected results, it would have been obvious to one of ordinary skill in the art the time the invention was made to pass the heating element along the belt ends as taught by Anderson as modified by Sakamoto or Penn at any angle within the finite range of greater than 0 degrees and up to 90 degrees as only the expected result of heating the ends would be achieved.

Regarding claims 25, 26, 40, and 41, Sakamoto teaches using the heating element either with or without the power source connected (Paragraph 0032 and Paragraph 0034). Penn teaches using the heating element with the power source connected. Thus, Anderson as modified by Sakamoto or Penn teach moving the self contained heating power source and heating element in unison while the heating element is in temporary contact with the belt ends, and Anderson as modified by Sakamoto teaches the self contained power source stationary while moving the heating element in temporary contact with the belt ends. Furthermore, Sakamoto teaches dividing the heating element and power source is convenient, and there are only two options, i.e. the power source and heating element move in unison or they do not. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the heating element and connected power source taught by Anderson as modified by Penn wherein the two are divided with the power source is stationary as such is more convenient as shown by Sakamoto.

Regarding claims 48 and 49, Anderson as modified by Sakamoto or Penn teach a kit and method of using a kit as claimed as more fully set forth above wherein both Sakamoto and Penn teach a compartment to house the power source and a switch operated circuit used to connect the power source with the heating element (Paragraph 0029 and 0034 of Sakamoto and Figure 1 and

Column 3, lines 40-45). Anderson teaches pressing the ends of the belt into contact with the heating element and removing the heating element while continuing to press the ends into contact to fuse the ends. Anderson does not specifically teach contacting the belt ends prior to heating the ends with a heating element. However, absent some unexpected result it would have been obvious to one of ordinary skill in the art at the time the invention was made to heat the belt ends as taught by Anderson by contacting the ends with the heating element either by pressing the ends into the heating element or pressing the ends together and then bringing the heating element into contact with the ends as either results in the ends of the belt contacting and pressing the heating element.

17. Claims 15 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson and Sakamoto or Penn as applied to claims 11-14, 16-29, and 31-49 above, and further in view of the admitted prior art (Specification page 11). Also, claim 50 is rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson, Wermelinger, and Sakamoto or Penn as applied to claims 2-4 and 10 above, and further in view of the admitted prior art.

Anderson and Sakamoto or Penn as applied above teach all of the limitations in claims 15 and 30 except for a specific teaching of using solid state controllers to produce an electrically pulsating current to modulate the duration of the electrical pulse through the heating element, it being noted neither Sakamoto nor Penn are limited to any particular means for applying current to the heating element. Solid state controllers are well known in the art for producing an electrically pulsating current as evidenced by the admitted prior art (Specification page 11, lines 7-10). It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply current to the heating element taught by Anderson as modified by Sakamoto or

Penn (or Anderson as modified by Wermelinger and Sakamoto or Penn) using a conventional solid state controller well known in the art for producing an electrical pulsating current as evidenced by the admitted prior art to control the duration of the electrical pulse through the heating element.

18. Claims 23 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson and Sakamoto or Penn as applied to claims 11-14, 16-29, and 31-49 above, and further in view of Wermelinger.

As noted above, Anderson teaches holding the belt ends in axial alignment while passing the heating element along the belt ends. Anderson as modified by Sakamoto or Penn do not specifically the angle at which the heating element is passed to the belt ends. However, because the heating element passes through an opening between the axially aligned belt ends the element must be at some angle greater than 0 degrees and up to 90 degrees, i.e. perpendicular, to pass through the opening between the belt ends. Wermelinger is exemplary of a similar method passing the heating element perpendicular to the belt ends (See the Figures). Absent any unexpected results, it would have been obvious to one of ordinary skill in the art the time the invention was made to pass the heating element along the belt ends as taught by Anderson as modified by Sakamoto or Penn at any angle within the finite range of greater than 0 degrees and up to 90 degrees as only the expected result of heating the ends would be achieved wherein perpendicular, i.e. 90 degrees, was specifically known and suitable for the same as evidenced by Wermelinger.

Conclusion

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John L. Goff** whose telephone number is **(571)272-1216**. The examiner can normally be reached on M-F (7:15 AM - 3:45 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John L. Goff/
Primary Examiner, Art Unit 1791